Handling the maintenance issue

After every job, we leave our client to maintain what we have built. Maintenance can be easy or it can be excessively expensive. Jerry Tyrrell tells us how the experts handle it.

About 10 years ago Tony Ransley and I wrote the *Property Maintenance Handbook**. In this book we defined maintenance as: "The process of keeping any part of or all of a building or facility in an agreed condition".

Simple? Not really.

Many people don't have a clue about how to maintain their building. It is rarely, if ever, thought about during design. And after the first painting cycle they usually spend too little. Or, if poorly advised, they spend too much. As the building ages, they fail to integrate updates in appearance or major services with the maintenance work, or they neglect their asset and face excessive costs in unnecessary replacement or repairs.

The art of maintenance is a balancing act. Owners want buildings to look good, so they worry about cosmetic appearance. Managers want everything to open, turn on, drain and not cause an emergency call-out after hours. Investors don't want to lose money because of extensive rot or concrete cancer. They also want the 'well maintained' tag.

> "Maintenance begins at the design stage when designers and architects choose their materials and finishes."

What was really clear to me and Tony was how maintenance is very much dependent on good design and construction. The superficial things like 'does it look nice' were more important to most owners and managers than whether the building would be easy to maintain, or continue to look good before cyclical maintenance had been undertaken.

Facility is the terminology everyone uses for a completed building that needs maintenance. I've included a diagram of the typical ingredients of a facility to remind you how the various parts fit together (see page 32).

Where maintenance starts

Unless you are still working on cottages, you would have probably done maintenance work. To me, maintenance begins at the design stage when designers and architects choose their materials and finishes. If we take shortcuts or select inferior products or subbies during construction, maintenance liability quickly increases. For instance, if a carpenter uses untreated pine trim around an external door or a plumber uses over length ➤

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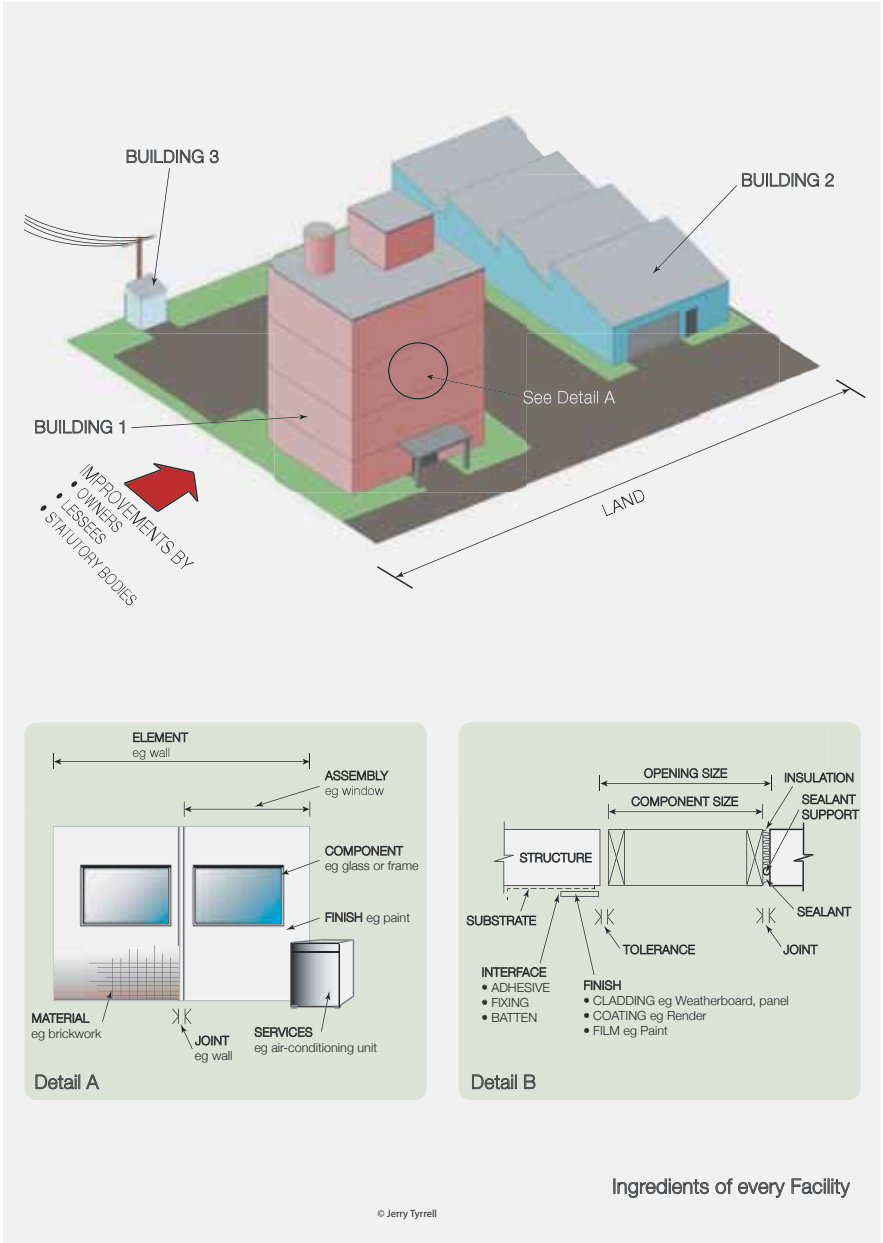

10kg lead roof flashing.

Of course, durability comes at a cost. Stainless steel is more expensive than brass, zinc or galvanised coated materials and sheet waterproofing membranes are more expensive than liquid applied ones. But many products are pretty much the same price and the client will happily pay the small cost difference necessary to get a better performing product. For instance, a 75mm x 100mm downpipe is only around 75c per metre more expensive than 50mm x 100mm. But it is less likely to block with leaves and will take peak rain better. And fitting a leaf guard to box gutter drains might cost the client $30 instead of $7,500 worth of unnecessary water damage. Choosing a smoke alarm with a 10-year rechargeable battery saves annual maintenance and battery replacement costs. More importantly, it is safer for every occupant as well.

You can see there is value in preventing unnecessary future running costs and our industry is starting to appreciate the 'life cycle cost' of our buildings. This now includes carbon costs, recyclability, demolition and disposal; in the future it will also blend in social costs of bad planning and design. The cheapest maintenance rarely includes undoing or replacing previous works. And if you are building close to the sea, next to the swimming pool or underground, it pays to make sure every material is fit for its purpose and is durable for these locations.

Take note designers, architects and investors!

One of the increasing costs of maintenance is access or – more specifically – a lack of adequate access. Once you have to access greater than 3.6m from ground level, you are dealing with more complex scaffolding rules and higher costs. From my perspective, only the top investment buildings that are built for the long term take access into consideration during the design stage. So access for future maintenance should be part of the design brief.

Owner's manual

Cars have a carefully prepared 'how to' manual. To keep your warranty you need to undertake certain maintenance after so many kilometres or months of driving. At handover of any building work, clients also need to know the maintenance they have to do. Even with simple buildings, there is quite a lot consumers should be told. Too often I have cases where the client was not advised to keep their driveway drain clean, or avoid soil building up over the slab edge, or check their hot water tempering valve.

The descending priorities of maintenance work are common sense:

- **Life safety** – keep all life safety measures working as intended (e.g. smoke alarms, pool gate latch). ➤

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TABLE 1: MAINTENANCE TO KEEP YOUR HOME SAFE

ITEM	ACTION	CYCLE	COMMENTARY
LIFE SAFETY			
Smoke alarms/detectors	Test, check battery	Annually	Must be 240v mains connected, 10 year rechargeable battery recommended. NB Change battery annually if not rechargeable.
RCD*s (Safety switches)	Push button/rest test	Annually	All circuits must be protected
Balustrades (including handrails)	Check stability, childproofing, assess deterioration in ands and joints of timber	Monthly	Height must at least 1m
Windows • access	Check sill height or opening size	Daily	Remove furniture which may encourage access to open window
• glass safety	Check assessable glass is shatterproof or crash rails fitted	Monthly	
Gas	Check/observe leaks/odours	Weekly	Especially relevant in closed areas
Pool • gate	Self closing, latch operating	Weekly/every use	
• fence	Check access under, check plant growth does not allow access, furniture against outside of fence	Monthly	
• first aid	Check CPR chart installed, check buoyancy aid available	Weekly	Learn CPR, train children to assist each other and to call for help, do not leave single children or non swimmers unsupervised
Heaters	Check no flammable materials adjacent heaters	Every use	Avoid radiator type, check obstructions around gas heaters, ensure natural ventilation when gas heaters in use
Switches/power points in wet areas/external	Check condition of casing, sealants and weatherproofing	Annually	
SAFETY			
SLIPS AND FALLS			
Floors		Annually	
• wet areas • external	Check floors for trip hazards		Use mat. Consider applying slip resistance coatings on floors ‹ R10
• stairs - nosings - single/half stairs	Check for loose or missing nosings		
• trip hazards	Remove where present		Ensure good lighting above any ½ step or trip hazard
HAZARDS			
Hazards within 2m of ground	Remove or fit buffer and sign	Annually	Raising floor levels can leave tops of door openings below 2m
Fall risk	Identify risk of falling more than 200mm	3 monthly	Any fall risk should have a handrail if less than 1m from ground and a childproof balustrade if more than 1m from ground
Roof access	Check any fall installed arrest system	Annually	
Hot water • TMV or TV	Test and service	5 years TV Annually TMV	
Dangerous goods • fuels • cleaners • medicines • herbicides • paints • solvents	Check all goods are safely stored in a child proof location	Weekly	Comply with the manufacturer's requirements for storage. Keeps Material Safety Data Sheets if you are using any products for commercial purposes.
Security • locks • video surveillance	Check locks are operating	Annually	
Asbestos	Identify in buildings built before 1985		Display Asbestos Register for all tradespeople or handymen to use when doing work on the building
Subfloors	Prohibit child and animal access to all voids under floor built prior to 1995 due to likely presence of toxic termite chemical.		Use cartridge type mask if you have to enter or crawl through these spaces

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Maintenance jargon

There are maintenance terms you need to know:

Planned maintenance – often called cyclical, routine, preventive or periodic.

This is work done periodically to restore a product to close to its original condition. Every material has a life and the surface or finish applied to it usually needs cleaning or recoating. Functional and mechanical items like motors**s, drains, taps or hinges** need lubrication,, **service and replacement** of washers, seals **s etc.**

Unplanned ma**intenance –** often called eme**rgency or** unexpected.

This is work th**at is** not part of plann**ed** maintenance. Typ**ical** causes of unplan**ned** maintenance are disasters, vandalism, accidents or unexpected failure.

- Safety – keep all parts of the building safe (e.g. loose stair nosing, re-level root damaged paving or faulty tempering valves).
- Operational – keep all devices working (e.g. automatic garage door, box gutters).
- Aesthetic – keep all fi nishes looking acceptable (e.g. paintwork).
- Upgrade – many items will be replaced at the end of their service life or maintenance cycle because there are better or more contemporary-looking new products.
- End of life replacement – some items will inevitably need replacement (e.g. steel based gutters, roof tiles).

See Table 1 on page 34 for major safety items your residential clients need to know about to keep their homes safe.

I have never liked doing unnecessary work. Even as an ap prentice painter, it used to bug me priming or painting over rusty steel nails. Or looking at rusty 15-year-old galvanised gutters full of leaves because of undersized roof drainage.

However, doing cyclical maintenance when the access is good; the base material is acceptable; the previous maintenance has been good; and owners embrace sensible upgrades; is great fun and an increasing part of our business.

Please email me any thoughts or experiences at jwtyrrell@tyrrells.com ■

Jerry Tyrrell is co-founder of Tyrrells Property Inspections. He has more than 38 years' experience as a labourer, tradesman, contractor, architect, mediator, building consultant and author.

Next Issue: Maintenance Part 2

*email me your address and I will send you a copy of the Property Maintenance Handbook.